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(54) CORRECTING LUMINANCE NON-UNIFORMITY IN A TILED PROJECTION SYSTEM

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See application file for complete search history.

(56)References Cited

U.S. PATENT DOCUMENTS

6,921,172	B2	7/2005	Ulichney et al.
7,220,006	B2*	5/2007	Allen et al 353/85
7,364,304	B2 *	4/2008	Nomizo et al 353/30
7,377,658	B2 *	5/2008	Jayaram et al 353/121
7,722,190	B2 *	5/2010	Weng et al 353/31
2004/0140982	A1*	7/2004	Pate 345/600
2005/0052621	A1*	3/2005	Allen et al 353/85
2005/0219467	A1*	10/2005	Nomizo et al 353/30

* cited by examiner

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ABSTRACT

A method of correcting luminance non-uniformity in a tiled projection system is disclosed. The method includes projecting with a plurality of projection devices a composite image wherein the composite image comprises a plurality of tiled images on a display surface with an overall luminance and correcting a luminance non-uniformity of the plurality of tiled images, wherein the luminance non-uniformity is based on a dimmed at least one of the plurality of tiled images, wherein correcting the luminance non-uniformity comprises utilizing at least one of the plurality of projection devices to adjust the overall luminance of the plurality of tiled images on the display surface.

18 Claims, 4 Drawing Sheets

Projecting with a plurality of projection devices a composite image wherein the composite image comprises a plurality of tiled images on a display surface with an overall luminance. 110

Correcting a luminance non-uniformity of the plurality of tiled images by utilizing at least one of the plurality of projection devices to adjust the overall luminance of the plurality of tiled images on the display surface.

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